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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/562,224	12/23/2005	Alexander Mueller	MULL3009/FJD	5317

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EXAMINER	
LE BOULLUEC, MICHAEL E	
ART UNIT	**PAPER NUMBER**
4146	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/562,224	MUELLER ET AL.	
	Examiner	Art Unit	
	MICHAEL LE BOULLUEC	4146	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 December 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *10-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *10-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *23 December 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *24 September 2007*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been filed in parent Application No. DE 10328296, filed on 23 June 2003.

2. Acknowledge that claims 1-9 have been cancelled by the preliminary amendment filed 23 December 2005.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims10-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Specifically in claims 10-13 and 15, the use of parentheses in claim language is limited to referencing the element numbers of the claimed invention. The applicant is

required to revise “(G; GMinimum; GMaximum)” and delete the parentheses in the specified claims.

Claims 10 and 12-13 recite the limitation "said limit value (G; GMinimum; GMaximum)". There is insufficient antecedent basis for this limitation in the claims.

Claim 11 recites the limitation "said limit value (G)" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claim 15 recites the limitation "an adjustable limit value (G; GMinimum; GMaximum)" in lines 4-5. There is insufficient antecedent basis for this limitation in the claim. The limitation is confusing in that claim 10 already recites "an adjustable limit value (G; GMinimum; GMaximum)”.

Claims 16-18 recite the limitation "the over-value (O)". There is insufficient antecedent basis for this limitation in the claims.

Claim Objections

5. Claim 12 objected to because of the following informalities:

- "allowable process variable" should be -- an allowable process variable --.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 10-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Langdon (US Patent 4383443).

Regarding claim 10, Langdon teaches a field device ("level measuring device", col. 9, line 41) for monitoring and/or determining a process variable (frequencies, col. 9, line 46) of a medium 12 (col. 9, line 43-44), wherein the process variable is preferably a fill level ("depth", col. 9, line 44), viscosity or density of the medium, comprising:

- an oscillatable unit 10 (col. 9, lines 41-42), a driving/receiving unit 13 ("piezoelectric transducer", col. 9, lines 44-45), which excites said oscillatable unit to oscillate ("generate flexural vibrations", col. 9, lines 45-46), or which receives oscillations ("the vibrations", col. 9, line 49), of said oscillatable unit ("receives a driving voltage", col. 9, line 47), as the case may be;
- a control/evaluation unit 14 ("oscillator", col. 9, lines 66)/16 ("receiver transducer", col. 10, line 1), which controls the oscillations of said oscillatable unit (col. 9, lines 66-68), or which evaluates the oscillations of said oscillatable unit (col. 10, lines 1-3), as the case may be, wherein:

- said control/evaluation unit produces an accretion alarm ("the fault can be immediately identified by the processing electronics", col. 8, lines 64-65), when the oscillation frequency of the oscillations of said oscillatable unit falls below an adjustable limit value ("resonance frequency", col. 9, line 61); and;
- said adjustable limit value determinable and/or calculable at least from measured and/or calculated dependencies of the oscillation frequency (f) on process conditions and/or on the process variable to be monitored and/or determined (col. 4, lines 61-65).

Regarding claim 11, Langdon teaches the field device as claimed in claim 10, wherein: the process variable is fill level ("position of the liquid surface", col. 4, line 54); and said adjustable limit value is determinable and/or calculable as a function (col. 4, lines 66-68) of the use of the field device, whether as a minimum switch (GMinimum) ("point of minimum wave amplitude", col. 4, line 53) or as a maximum switch (GMaximum) ("point of maximum wave amplitude", col. 4, lines 59-60).

Regarding claim 12, Langdon teaches the field device as claimed in claim 10, wherein: said adjustable limit value is determinable and/or calculable from the smallest oscillation frequency (f) as a function (col. 4, lines 59-60) of the maximum with reference to the field device, an allowable process conditions ("the other elongnate member has a maximum sensitivity to liquid level change", col. 4, lines 64-65) and/or as a function of the maximum, with reference to the field device and/or with reference to the application allowable process variable to be monitored and/or determined.

Regarding claim 13, Langdon teaches the field device as claimed in claim 10, wherein: said adjustable limit value is determinable and/or calculable taking into consideration a maximum allowable accretion, or a frequency change associated with the maximum allowable accretion (col. 4, lines 61-68).

Regarding claim 14, Langdon teaches the field device as claimed in claim 10, wherein: the process conditions involve temperature ("operating temperature", col. 9, line 6) and/or pressure ("operate under the extremes of pressure", col. 9, line 4) and/or density and/or viscosity ("density and viscosity of the medium", col. 2, line 56) and/or fill level of the medium.

Regarding claim 15, Langdon teaches the field device as claimed in claim 10, further comprising: a review unit ("programmed microprocessor", col. 8, line 46) which produces an accretion alarm independently of said control/evaluation unit, when the oscillation frequency (f) of said oscillations of said oscillatable unit falls below an adjustable limit value (col. 8, lines 48-50).

Regarding claim 16, Langdon teaches The field device as claimed in claim 10, wherein: said control/evaluation unit produces a "free" report ("a numerical display using light-emitting diodes or other conventional means, col. 8, lines 51-52), when the oscillation frequency ("frequency shift", col. 8, lines 37-38) of the oscillations of said oscillatable unit exceed an adjustable over-value ("out-of-phase shear term", col. 8, line 46); and the over-value is determinable and/or calculable from measured and/or calculated ("the average rate of energy dissipation", col. 8, lines 48-49) dependencies of

the oscillation frequency on the process variable to be determined and/or to be monitored.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claims 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Langdon (US Patent 4383443) as applied to claim 16 above, and further in view of Hager et al. (US Patent 4783987).

Regarding claim 17, Langdon discloses the invention as claimed above, however does not specifically teach the field device wherein the adjustable over-value is determinable and/or calculable from a greatest oscillation frequency as a function of corresponding maximum, in reference to the field device, an allowable process conditions and as a function of said oscillatable unit oscillating uncovered.

Hager et al. teach the adjustable over-value (col. 7, lines 2-4) is determinable and/or calculable from a greatest oscillation frequency (col. 6, lines 14-17) as a function (col. 7, lines 10-13) of corresponding maximum, in reference to the field device, an

allowable process conditions and as a function (col. 5, lines 5-8) of said oscillatable unit oscillating uncovered (col. 1, lines 32-36).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to modify the program of Langdon with the capability to record, run analyses of data collected, and store data as taught by Hager et al. for improved detection of low and high material levels and malfunction of the apparatus. Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Langdon and Hager et al. to obtain the invention specified in claim 17.

Regarding claim 18, Langdon discloses the invention as claimed above, however does not specifically teach a field device wherein the adjustable over-value is determinable and/or calculable taking into consideration a maximum allowable accretion, or a frequency change associated with the maximum allowable accretion.

Hager et al. teach the adjustable over-value is determinable and/or calculable taking into consideration a maximum allowable accretion (col. 7, lines 14-18), or a frequency change (col.2, lines 59-61) associated with the maximum allowable accretion.

At the time of the invention, it would have been obvious to one of ordinary skill in the art to modify the program of Langdon with the capability to record, run analyses of data collected, and store data as taught by Hager et al. for improved detection of low and high material levels and malfunction of the apparatus. Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Langdon and Hager et al. to obtain the invention specified in claim 18.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL LE BOULLUEC whose telephone number is (571)270-3892. The examiner can normally be reached on Monday-Thursday from 7:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marvin Lateef, can be reached on 571-290-5026. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MLe 10 April 2008

/MARVIN LATEEF/
Supervisory Patent Examiner, Art Unit 4146